

ACCESSION NR: AT4033719

S/0000/64/000/000/0334/0345.

AUTHOR: Stepanov, V. P.; Pridantsev, M. V.; Topilin, V. V.; Dzugutov, M. Ya.

TITLE: Effect of inertial stirring of metal during crystallization on development of spotty liquation and ingot structure

SOURCE: USSR. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali. Fizikokhimicheskiye osnovy\* metallurgicheskikh protsessov (Physico-chemical basis of metallurgical processes); sbornik statey. Moscow, Metallurgizdat, 1964, 334-345

TOPIC TAGS: foundry technique, casting technique, heat resistant alloy, mold charge stirring, ingot structure, spotty liquation, mold rotation, inertial stirring

ABSTRACT: Ingots of heat resistant alloys (Cr-Ni or Fe-Cr-Ni base with Ti, Al, B or other elements), weighing 50, 1000 and 2100 kg were cast with the mold charge stirred inertially while the metal crystallized. The shapes of the ingots were round and cylindrical, round with tapers of 8 or 15°, octahedral and triconical, respectively. Stirring was in the form of retrorotary motion of the suspended charged mold, the latter's return travel being 60 to 80° for the heavier ingots and 160 to 180° for the 50 kg pieces. Stirring periods ranged from 20 to 90 min. for the former and 5 to 39 min. for the latter, at frequencies of 8 to 25 agitations per minute. Stirring reduced or eliminated

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spotty liquation and produced a uniform, fine-grained cast structure in the stirring zone. Two cast structure zones with a liquation ring in between occur in an ingot where available facilities do not allow the stirring of the metal immediately after or during the charging of a mold. "N. A. Shirayev, N. D. Orekhov, G. I. Burylichev and L. F. Cherny'sheva also took part in the work." Orig. art. has: 6 illustrations.

ASSOCIATION: Komissiya po fiziko-khimicheskim osnovam proizvodstva stali  
(Committee on the Physico-Chemical Basis of Steel Production)

SUBMITTED: 18Oct63

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: MM

NO REF SOV: 004

OTHER: 000

Card

2/2

B.R.

ACCESSION NR: AP4029835

8/0279/64/000/002/0110/0116

AUTHOR: Stepanov, V. P. (Moscow); Pridantsev, M. V. (Moscow); Kernich, N. K. (Moscow)

TITLE: On the extra-axial liquation inhomogeneity in chrome-nickel alloy ingots

SOURCE: AN SSR. Izv. Metallurgiya i gornoye delo, no. 2, 1964, 110-116

TOPIC TAGS: chrome nickel alloy, alloy ingot, ingot structure, structure inhomogeneity, Kh20N80 alloy, segregation inhomogeneity, KhN77TYuR, KhN77TYu

ABSTRACT: This paper presents results of a study of the effect of some alloying elements on the formation of off-center segregation inhomogeneity in chromium-nickel and iron-chromium-nickel base alloys, as well as the chemical composition and microstructure of the segregation zones. The authors studied the effects of boron in Kh20N80 alloy in which off-center segregation does not arise under any condition; the effects of titanium and aluminum, separately and jointly, in both Kh20N80 and on KhN35VTYu alloys; the effects of niobium and carbon in KhN77TYuR alloy. The results are presented in a table, with photomicrographs of the microstructure of the segregation zone in the KhN77TYuR and KhN77TYu alloys. The

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7,  
authors drew the following conclusions: 1) the tendencies of steels and alloys to form off-center segregation inhomogeneity in ingots is determined by their chemical composition, 2) a smaller segregation inhomogeneity in ingots can be obtained by decreasing the content or totally eliminating certain elements such as titanium, aluminum, and boron from the alloy and by introducing new elements that may bind the segregation elements into compounds at an early crystallization stage, 3) in chromium-nickel base alloys containing titanium and aluminum, a decrease in the segregation inhomogeneity can be obtained by adding a specific amount of niobium. Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: 29Apr63

ENCL: 00

SUB CODE: MM

NO REF SOV: 011

OTHER: 001

Card 2/2

STEPANOV, V.P.; MAKSIMOV, S.I.; GAVRILOV, M.N.; SEYDEL, L.R.

Electronic instrument for measuring the interface level  
of raffinate and extract solutions. Mash. i nef. obr.  
no.3:22-25 '64. (MIRA 17:5)

1. Nauchno-issledovatel'skiy i proyektnyy institut po  
kompleksnoy avtomatizatsii proizvodstvennykh protsessov  
v neftyanoy i khimicheskoy promyshlennosti.

L 32913-65 EPA(s)-2/EWT(m)/EWA(d)/EWP(t)/EPA(bb)-2/EWP(b) Pad/Pt-10 IJP(c)  
 MJW/JD/HW

ACCESSION NR: AP5001610

S/0279/64/000/006/0081/0015

AUTHOR: Pridantsev, M. V.; Stepanov, V. P.; Tal'yantsev, V. S.; Tozilin, V. V.; Voynovskiy, Ye. V.

TITLE: Effect of electrical operating conditions of vacuum arc remelting on extra-axial liquation in heat-resistant alloys

SOURCE: AN SSSR. Izvestiya. Metallurgiya i gornoye delo, no. 6, 1984, 81-85

TOPIC TAGS: extra axial liquation, vacuum arc melting, heat resistant alloy,  
 operating condition KhN35VTYu alloy, KhN77TYuR alloy

ABSTRACT: By vacuum arc melting KhN35VTYu and KhN77TYuR alloys under optimum electrical conditions it was possible to obtain 800 kg, 380 mm diameter, ingots free of extra-axial liquation nonuniformities. This was achieved in TSEP-359B and VD-2 type vacuum arc furnaces at melting rates of 3.5 and 3.3 kg/min (I = 5.2 ka, V = 26-28v). The electrical rating of the arc and the resultant rate of melting, and of crystallization, are the determinants of extra-axial liquation in the ingots. Increasing the power of the arc and the rate of melting

Card 1/2

L 32913-65

ACCESSION NR: AP5001610

above a value determined for each alloy caused formation of extra-axial liquation while melting at too slow rates led to cooling of the metal at the crystallizer walls and formation of coarse involutions. The structure and form of the extra-axial liquations in ingots formed under unfavorable melting conditions were similar to liquation in large ingots obtained by conventional methods. When a solenoid was used with direct current in vacuum arc melting of the KhN35VTu alloy, strongly developed liquation nonuniformity of a peculiar form appeared, even under those conditions which, without the solenoid, formed metal free of the extra-axial liquation. This liquation was caused by the circulation of the liquid metal bath under the effect of the magnetic field of the solenoid and separation of the liquid and solid phases during crystallization. Use of a solenoid with alternating current had little effect on the degree of extra axial liquation developed.

"A. Ya. Leyzerova, N. K. Kernich, T. S. Rozanova, L. F. Cherny\*shova, M. I. Pichugina, T. I. Pentyak took part in conducting the experiments." Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Moskva-Elektrostal' (Electric Steel)

SUBMITTED: 27Dec63

ENCL: 00

SUB CODE: GC MM

NR REF SOV: 005

OTHER: 000

Card 2/2

ALIYEV, T.M.; STEPANOV, V.P.

Principle for plotting a zero-regulator for a.c. compensation  
circuits basing on phase sign. Izv. vys. ucheb. zar.; prib. ?  
no.4238-45 '64 (MIRA 1831)

1. Azerbaydzhanskiy institut nef'ti i khimii imeni Azizbekova.  
Rekomendovana kafedroy elektricheskikh izmereniy i vychislitel'noy tekhniki.



ALIYEV, T.M.; STEPANOV, V.P.

Device for representing the vector diagram of an electrical  
circuit. Trudy Inst. avtom. i elektrometr. SO AN SSSR no.10;  
93-99 '65. (MIRA 18:8)

L 40992-66 EWT(m)/EWP(t)/ETI IJP(c) NO HW

ACC NR: AP6027289

SOURCE CODE: UR/0133/66/000/000/0713/0716 40

AUTHOR: Dzugutov, M. Ya.; Stepanov, V. P.; Varlakov, V. P.

ORG: Elektrostal' Plant (Zavod "Elektrostal'")

TITLE: Effect of the melting method on the properties, phase composition, and structure of KhN77TYuR alloy

SOURCE: Stal', no. 8, 1966, 713-716

TOPIC TAGS: ~~nickel chromium-titanium alloy~~, ~~aluminum containing alloy~~, ~~nickel chromium alloy~~, ~~melting~~, ~~alloy~~ vacuum melting, ~~alloy~~ *titanium alloy* electroslag melting / KhN77TYuR alloy

ABSTRACT: The effect of vacuum arc melting and electroslag melting on the chemical and phase composition, structure, and properties of KhN77TYuR heat-resistant, nickel-base alloy has been investigated. Neither vacuum arc nor electroslag melting brought about any significant changes in the content of alloying elements, impurities, or gases, except for lead and zinc, whose respective contents, 0.00011 and 0.0027%, in the vacuum-arc melted metal were considerably lower than those in conventionally melted (open atmosphere arc furnace) and electroslag melted metals, 0.00037—0.00039% and 0.0048—0.0047%. The melting method was found to have no significant effect on the structure and grain size of alloy or on the rate of grain growth in alloy cold rolled with reductions of 5—25% and then annealed at 800—1200C. A considerable

Card 1/2

UDC: 669.187.26:669.187.2.083.4:621.365.2

L 40992-66

ACC NR: AP6027289

grain growth was observed at temperatures above 1000C, regardless of the melting method. The most significant effect of the melting method was observed in the response to aging. In the vacuum-arc and electroslag melted alloy the lattice parameter of the solid solution reaches a minimum and the content of precipitated  $\gamma'$ -phase reaches a maximum (in 50-hr aging) at 750C, compared to 800C for conventionally melted alloy. No significant difference in mechanical properties was observed except for a somewhat higher strength and ductility in the vacuum-arc melted metal. The respective rupture life at 750C under a stress of 30 kg/mm<sup>2</sup> was 172—210, 188—260, and 195—237 for conventionally, vacuum-arc, and electroslag melted alloy. It is noted that vacuum-arc melted alloy is somewhat more susceptible to overheating than conventionally melted or electroslag melted alloy. Orig. art. has: 4 figures and 3 tables. [DV]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 003/ ATD PRESS: 5058  
ETC/ AFSTC

Card 2/2 11b

I. 09139-67 EWT(m)/EWP(w)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW  
 ACC NR: AP6027294 SOURCE CODE: UR/0133/66/000/008/0735/0738

AUTHOR: Doronin, V. M.; Stepanov, V. P.; Dzugutov, M. Ya. 28

ORG: "Elektrostal'" Plant (Zavod "Elektrostal'")

TITLE: Softening heat treatment of large forgings made from martensite steel

SOURCE: Stal', no. 8, 1966, 735-738

TOPIC TAGS: martensite steel, metal heat treatment, steel forging

ABSTRACT: EI961<sup>6</sup>, EP65<sup>4</sup> and other types of high temperature steel characterized by high austenite stability are not suited to continuous retarded cooling after forging. This is explained by the fact that continuous retarded cooling after forging does not ensure the elimination of cracks in large forgings. A successive softening heat treatment process was developed at the "Elektrostal'" Plant which completely eliminates such defects in crack sensitive steel. This new heat treatment process was tested under industrial conditions and proved to be highly reliable. The process can be recommended for grades of steel of this type provided that the necessary corrections are considered such as the stability of supercooled austenite, crack sensitivity of the given steel, forging dimensions, shrinkage and the particular design of furnace equipment. Orig. art. has: 3 figures, 1 table.

SUB CODE: 11/ SUBM DATE: None/ ORIG REF: 004/ OTH REF: 001

Card 1/1 nat

UDC: 669.14.018.45

2007, V.

Representing the results of our research plan, we are pleased to  
 find in detail guaranteed price of the...  
 no. 10 10-42 3-1946

1. Kazanskaya gosudarstvennaya ekspeditsiya.

STEPANOV, V.P.; KENZIN, F.A.; SURKOV, A.D.

Tectonics of the northern dome in the Tatar Arch based on geophysical prospecting data. Geol. nefti i gaza 9 no.9:29-33 S '65. (MIRA 18:9)

1. Kazanskaya geofizicheskaya ekspeditsiya.

STANOV, V. . (Moskva); FOMIN, V. N. (Moskva); FOMIN, V. N. (Moskva)

Extra-axial segregation of heterogeneities in chromium-nickel  
alloy ingots. Izv. AN SSSR Met. i gor. dol. no. 2:110-116  
Moskva (1974) (MIRA 17:8)

1. The first part of the document is a list of names and titles of the members of the committee. The names are: Mr. J. Edgar Hoover, Mr. W. A. Rorer, Mr. J. B. Connelley, Mr. J. C. G. ... (The text is very faint and difficult to read.)



PRIDANTSEV, M.V.; STEPANOV, V.F.; TALYANTSEV, V.S.; TOPILIN, V.V.;  
VOYNOVSKIY, Ye.V.

Influence of electrical condition of a vacuum arc remelting  
on the extra-axial segregation in heat resistant alloys.  
Izv. AN SSSR. Met. 1 gor. delo no.6:81-85 N-D '64.

(MIIA 18:3)

L 64370-65 EWT(m)/ENP(w)/EWA(d)/T/ENP(t)/ENP(k)/ENP(z)/ENP(b)/EWA(c) AJW/JD/HW  
 UR/0182/65/000/001/0014/0019  
 621.73.032

ACCESSION NR: AP5018544

AUTHORS: Dzugutov, M. Ya.; Stepanov, V. P.; Zaglodina, G. V. —  
 44,55 44,57

TITLE: Heating of large ingots and forging blanks of high-alloy aging steels and  
 alloys in furnace chambers 44,55 16

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 7, 1965, 14-19

TOPIC TAGS: ingot heating, ingot preparation, forging temperature/ EI481 alloy,  
 EI457B alloy, EI787 alloy

ABSTRACT: The technology of heating ingots and forging blanks made of alloys EI481,  
 EI457B and EI787 was experimentally investigated. Through preliminary experiments  
 it was established that the maximum permissible working temperatures are 1170, 1180,  
 and 1110C respectively (before material properties deteriorate), and the minimum  
 temperatures are 900-950C (below which they have insufficient plastic properties for  
 forging). To determine heating regimes which would not produce internal cracks,  
 2100-kg ingots were heated by 3 different heating programs and the maximum tempera-  
 ture differences were measured. It was found that the maximum temperature differ-  
 ence occurs during the initial heating of the ingot at the initial furnace  
 temperature (600-700C) rather than during heating to the final temperature of 1170C  
 Card 1/3

L 64370-65

ACCESSION NR: AP5018544

( $\Delta T$  below 80-120C). Regimes 1 (2 hours at 600C, 10 hours to reach 1170C, hold at 1170C for 3 hours) and 2 (2.5 hrs. at 700C, 8.75 to 1170C, hold 2.75 hours at 1170C) were found to give maximum temperature differences of 145 and 269C respectively but did not produce internal cracks and can be used for 2100-kg ingot heating. To determine safe heating programs for raising hot ingots to the forging temperature ( $\approx 1180C$ ), 2100-kg ingots were first heated to 1200C, cooled in air to an outside temperature of 500-550C (inside temperature 880-900C) and then reheated according to five different heating schedules. It was found that for alloys EI437B, EI787, and for similar alloys the following heating schedule was appropriate: ingot surface temperature must be  $> 500C$  before placing into 950-1050C furnace (for at least 1.5 hours) and heating to forging temperature should take  $> 2.5$  hours; ingot should be held at forging temperature for at least 2 hours. To determine safe heating regimes of forged metal, 300-mm diameter x 400-mm long forged EI437B specimens (after 3 types of heat treatment) were subjected to 4 heating programs. The following was established as a satisfactory schedule: part should be held for at least 1 hour at a maximum furnace temperature of 600C, then heated to 1180C during at least 4.5 hours, and kept at 1180C (furnace temperature) for at least 1.5 hours. (orig. art. has: 5 figures and 5 tables.

ASSOCIATION: none

Card 2/3

L 64370-55  
ACCESSION NR: AP5018544

SUBMITTED: 00

ENCL: 00

SUB CODE: IE, MM

NO REF SOV: 000

OTHER: 000

*llc*  
Card 3/3

STEPANOV, V.P.

Deformations of fluid-saturated porous media in case of small dynamic loads. Trudy VNII no.42:153-163 '65.

Reflection of sound waves from a surface separating various two-component media. Ibid.:164-173

Determining certain parameters of porous beds on the basis of the variation of the fluid level in the well produced by variation of atmospheric pressure. Ibid.:244-251 (MIRA 18:5)

KONYAYEV, A.N., inzh.; MAYSKIY, V.Ye., inzh.; STEPANOV, V.R., inzh.

Modernization of the TE3 serial diesel locomotives. Mashinostroenie  
no.4:78-81 J1-Ag '62. (MIRA 15:9)

1. Luganskiy teplovozostroitel'nyy zavod imeni Oktyabr'skoy  
revolyutsii.

(Lugansk--Diesel locomotives)

STEPANOV, V.S.

Closing extensive anterolateral and lateral defects of the abdominal wall. Vest.khir.74 no.2:58-59 Mr '54. (MLEA 7:4)

1. Iz kafedry operativnoy khirurgii (zaveduyushchiy - dotsent V.P. Aratskiy) Gor'kovskogo meditsinskogo instituta im. S.M.Kirova (nauchnyy rukovoditel' - professor V.M.Durmashkin).  
(Abdomen--Surgery)

STEPANOV, V.S.

Anatomical principles of plastic surgery of large defects of the abdominal wall by the transplantation of musculo-aponeurotic grafts.  
Khirurgia no.4:18-25 Ap '55. (MLRA 8:9)

1. Kafedra operativnoy khirurgii s topograficheskoy anatomiyei  
(zav.-dotsent V.P. Aratskiy, nauchnyy rukovoditel'-prof. V.M.  
Durnashkin) Gor'kovskogo meditsinskogo instituta imeni S.M. Kirova.

(ABDOMINAL WALL, surgery,

plastic musc.-aponeurotic grafts)

(TRANSPLANTATION,

musc.-aponeurotic grafts in reconstruction of abdom.  
wall)



STEPANOV, V.S., kand.med.nauk

Unusual inflow of the pulmonary vein into the innominate vein. Vest.  
khir. 79 no.9:138-139 S '57. (MIRA 10:11)

1. Iz kafedry operativnoy khirurgii (zav. - prof. V.K.Krasovitsov)  
Kubanskogo meditsinskogo instituta im. Krasnoy Armii. Adres  
avtora: Krasnodar, ul. Sedina, d.4, Kubanskiy meditsinskiy institut  
(VEINS, PULMONARY, abnorm.  
inflow into innominate veins)  
(VEINS, INNOMINATE, abnorm.  
inflow of pulm. vein into innominate vein)

STEPANOV, V.S., kand. med. nauk.

late results of plastic surgery for extensive defects of the abdominal wall. Sov. med. 22 no.12:114-118 D '58. (MIRA 12:1)

1. Iz kafedry operativnoy khirurgii i topograficheskoy anatomii Gor'kovskogo meditsinskogo instituta imeni S.M. Kirova (nauchnyy rukovoditel' - prof. V.M. Darmashkin).

(ABDOMEN WALL, abnorm.

extensive defect, plastic surg., remote results (Rus))

STEPANOV, V.S.

Plastic surgery of extensive defects of the pericardium after  
pneumonectomy with muscular and musculo-aponeurotic flaps in  
experiment. Khirurgia 35 no.8:24-32 Ag '59. (MIRA 13:12)  
(PERICARDIUM—SURGERY) (MUSCLES—TRANSPLANTATION)

STEPANOV, V.S.

Plastic repair of extensive pericardial defects after pneumonectomy  
with the aid of intercostal muscle flaps in experimental conditions.  
Grud. khir. 3 no.2:63-67 '61. (MIRA 14:4)  
(LUNGS--SURGERY) (PERICARDIUM--SURGERY)

STEPANOV, V.S., kand.med.nauk

Alloplasty of extensive pericardial defects after pneumonectomy  
in experimental conditions. Vest.khir. 86 no.3:48-51 Mr '61.  
(MIRA 14:3)

1. Iz kafedry operativnoy khirurgii i topograficheskoy anatomii  
(zav. - prof. V.K. Krasovitev) Kubanskogo meditsinskogo instituta  
im. Krasnoy Armii. Adres avtora: Krasnodar, ul. Sedina 4, Kubanskiy  
meditsinskiy institut.  
(LUNGS--SURGERY) (PERICARDIUM--SURGERY)



STEPANOV, V.S. (Moskva)

Upsurge of the public health system of the Korean People's Democratic Republic. Zdrav.Ros.Feder. 4 no.1:34-37 Ja '60. (MIRA 13:5)

(KOREA, NORTH--PUBLIC HEALTH)

STEPANOV, V.S.

Improve the system for the higher training of managerial personnel  
in the public health system. Zdrav. Rcs. Feder. 5 no. 4:29-34 Ap  
'61. (MIRA 14:4)

1. Iz kafedry organizatsii zdravookhraneniya (zav. - prof. N.A.  
Vinogradov) Tsentral'nogo instituta usovershenstvovaniya vrachey.  
(PUBLIC HEALTH ADMINISTRATION—STUDY AND TEACHING)



STEPANOV, V.S.

Methods for carrying out inspections of public health agencies and  
institutions. Zdrav. Ros. Feder. 6 no.3:45-47 Mr '62. (MIRA 15:4)  
(PUBLIC HEALTH)

SOV/2215

PHASE I DOSE  
28(0); 5(a); 6(2)  
Vsesoyunny nauchno-issledovatel'skiy institut metrologii i  
Mendeleyeva

Vsesoyuznyy nauchno-issledovatel'skiy rabot; sbornik No.2 (Scientific D.I. Mendeleeva  
Referaty nauchno-issledovatel'skikh rabot; sbornik No.2) Moscow,  
1960. 187 pages. 100 copies printed.

Research Abstracts: Current Contents in  
Standardiz., 1958. 139 p. 1,000 copies planned.  
USSR. Komitet standartov, ser. 1  
Additional Sponsoring Agency:  
Vuzovskiy priborov.

Additional sponsoring agencies:  
Ameritel'nykh priborov.  
Kondrat'yeva.

Ed.: S. V. Reshetina; Tech. Ed.: M. A. Kononov. Intended for scientists, researchers, and measures, and

**PURPOSE:** These reports are in developing standards, and engineers engaged in various industries.

**COVERAGE:** The volume contains 128 reports on standards of measurement and engineering for the various industries. The reports were prepared by scientists of the Academy of Sciences of the USSR. The reports were prepared by scientists of the Academy of Sciences of the USSR. The reports were prepared by scientists of the Academy of Sciences of the USSR.

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capitulum, Q.V. (Vasil'vri). "Etalon" plant  
Vanduzhnik Clocks Made by the  
Dudarchik (Kodirp). suspension 35

4. Sapel'nikov, M.D.; P.M. Pedchenko, and V.I. Isochronous Suspension. Astronomical Pendulum Clocks With Isochronous Suspension. *Tr. Gos. univ. Ser. Fiz.-mat. nauki*, 1976, No. 1, p. 103.

**Studying Astronomical**

rochigachau, ...  
 Studying Temperatures by the "Etalon" Plant  
 (VNIIM).  
 Propagation of Invar Rods Produced by the VNIIM Transit  
 36

longation of the  
Studying the Pivots of the  
(VNIIM)  
Aleksseyeva, S. I.  
the vernier

Alexander, J. A.  
Instrument  
3.5. (VNLIA).  
Studying a Model of the Vernier  
33

Tovhigrechko, S.S. (inventor),  
Clock  
Cylindrical Chronograph for Recording the  
Clock 38

Stepanov, V.S. (VNIIM) Cylindrical Enclosure  
of Clocks

12/8/27  
Washington

VOLKOVA, Ye.A.; KARTASHEV, A.I.; ROMANOVA, M.F.; STEPANOV, V.S.

Universal interferometer designed by ~~the~~ All-Union Scientific  
Research Institute of Metrology and used for measuring and measures  
and geodetic quartz staffs of up to 1,200 mm. length. Trudy VNIIM  
no.26:43-50 '55. (MIRA 11:6)

(Interferometer)

KUTAY, A.K.; GALNYKIN, A.Ya.; STEPANOV, V.S.

Development and study of the contact method for film gauging.  
Trudy LIKI no. 5:116-123 '59. (MIRA 13:12)

1. Kafedra tekhnologii tochnogo mashinostroyeniya Leningradskogo  
instituta kinoinzhenerov.

(Motion-picture photography--Films)  
(Measuring instruments)

84833

13.2740  
9,5400

S/033/60/037/005/018/024  
E032/E314

AUTHORS: Smirnov, Ye.I., Stepanov, V.S. and Tovchigrechko, S.S.

TITLE: A<sup>V</sup>Solar-sidereal Synchronous Motor Type (3CД-1 (SZSD-1))

PERIODICAL: Astronomicheskii zhurnal, 1960, Vol. 37, No. 5,  
pp. 927 - 930

TEXT: A description is given of the construction of a synchronous motor working in conjunction with a quartz clock, which can be used to obtain simultaneously one-second pulses of both solar and sidereal times. <sup>V</sup>The principle of the motor is shown in Fig. 1. The stator of the motor is supplied from a 1 000 c.p.s. source and brings into motion the shaft 1 of the rotor. This motion is transmitted to the second-shaft through a 1:10 gear. The latter executes 86 400 revs. per average solar day. The rotation of the shaft 3 is transmitted to the minute-shaft 4 through a 1:60 gear. With the aid of the cam 6, contact 7, the gear, 8, 9 and the adjusting knob 10, it is possible to obtain second-pulses of the mean solar time and also to phase them in the required fashion. The minute pulses of the mean solar time can be obtained with a similar arrangement shown at 11. Another mechanical device coupled to the main shaft 3

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84933

S/033/60/037/005/018/024

E032/E314

A Solar-sidereal Synchronous Motor Type **C3CA-1 (SZSD-1)**

generates second-pulses of the sidereal time. Tests carried out in 1959 show that quartz<sup>clock</sup>/controlled synchronous motors of the above type have the following properties: second pulses of both solar and sidereal time have a spread of about

$10^{-4}$  sec; the diurnal rate of the sidereal pulses is  $+ 0.007$  sec; mean quadratic variation in the diurnal rate is  $10^{-3}$  sec. There are 2 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii imeni D.I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D.I. Mendeleyev)

SUBMITTED: June 9, 1959, initially,  
January 10, 1960, after revision

Card 2/2

ACCESSION NR: AP4007531

S/0214/63/000/002/0043/0050

AUTHOR: Kuklin, G. V.; Stepanov, V. S.

TITLE: Motion of gas and magnetic field in a sunspot

SOURCE: Solnechny\*ye danny\*ye, no. 2, 1963, 43-50

TOPIC TAGS: sunspot, velocity vector, magnetic force line, solar surface curvature, sunspot radius, penumbra, photosphere

ABSTRACT: Four kinds of motion vectors in a sunspot are studied:  $v_1$ , the rotation velocity about the spot axis;  $v_2$ , the velocity of the vertical motion of gas masses;  $v_3$ , the velocity of horizontal dilatation; and  $v_4$ , the velocity of the jet outflow of gas masses. The functional correlation between the observed radial velocities and the four vectors is given by a formula which is applied to the determination of vectors under certain assumptions about the magnetic field and the shape of the spot. The magnetic field is assumed to be totally connected with the gas, and the spot is assumed to be radially symmetric. The results obtained for radial velocities at different  $r$  values are represented graphically in order to find the

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ACCESSION NR: AP4007531

vector dependence upon the radial velocity. The velocity vectors were determined by a special templet. These preliminary investigations detected the rotational motion of the magnetic field, the dilatation of the magnetic field, and the vertical motion of gas masses and their outflow from the spot penumbra. The angular velocity of the magnetic field rotation is different in various parts of the spot: The period of rotation at the border of the whole spot is 3.7 days, and at the border of the umbra it is 1.3 days. Orig. art. has: 6 figures and 5 formulas.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery\* i rasprostraneniya radiovoln Sibirskogo otdeleniya AN SSSR (Institute of Terrestrial Magnetism, Ionosphere, and Propagation of Radio Waves, Siberian Department, AN SSSR)

SUBMITTED: 00

DATE ACQ: 21Jan64

ENCL: 00

SUB CODE: AS

NO REF SOV: 002

OTHER: 001

Card 2/2



KUTAY, A.K.; GAIYKIN, A.Y.; STEPANOV, V.S.

Contact method for measuring the geometric parameters of 35 mm motion-picture films. Trudy LKI no.11:45-52 '64.

(MIRA 18:10)

1. Kafedra tekhnologii tekhnogo mashinostroyeniya Leningradskogo Instituta kinomashinostroyeniya.

S/182/60/000/011/014/016  
A161/A029

AUTHORS: Borinskiy, M.I., Stepanov, V.S.

TITLE: Modernization of a 9,000-Ton Press

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No.11, pp.44-46

TEXT: The article contains detailed information on the modernization of a hydraulic 9,000-ton cold press at the Uralmashzavod Plant used for cold working of nonmagnetic steel blanks for turbogenerator tire rings after forging and snagging. The press has been equipped with a new travel regulator for the bottom mobile crosshead (Fig. 1), a new mandrel-turning mechanism (Fig. 2) and a new adjustable mandrel support seat (Fig. 3). Prior to 1959, cold working was produced on this press and semi-hot working on a steam-hydraulic press with a higher pressure that was not suitable because of uneven deformation of the ring walls. After the described modernization the 9,000-ton cold press can be used for both cold and semi-hot work and its productivity is 4 times higher. The crosshead travel regulator (Fig. 1) consists of a casing and a plate in one piece (1 and 2) placed under the floor plates; the plate (2) is attached

Card 1/6

Modernization of a 9,000-Ton Press

S/182/60/000/011/014/016  
A161/A029

to the press cylinders. The bushing (3) inside the casing with an adjusting bolt (4) can move upward and its travel is limited by the fixing screw (15). The hinge (9) of the bracket (16) welded to the plate is the rocking point of the lever (6) whose long arm is connected to the tension spring (5) and the short arm holds the bushing through the hinge (17) in bottom limit position. The long lever arm contacts the roller (8) of the limit switch (7) BK 211 (BY-211) actuating the electromagnet of the inlet valve and switching off the electromagnet of the outlet valve, which causes the work stroke of the press. The hooked rod (14) is attached to the bracket (11) on the mobile press table and transmits the table motion to the adjusting bolt (4). The space between the bottom end of this bolt and the rod hook must be made equal to the press work stroke travel. When the table rises, the rod hook reaches the end of the adjusting bolt and lifts it together with the bushing (3). The bushing lifts the short lever arm, the long arm goes down on the limit switch lever roller and the limit switch cuts off the electromagnet of the inlet valve, simultaneously switches on the electromagnet of the outlet valve, and the table descends. The new regulator is more sensitive than the old one and the preset tire ring wall thickness is maintained with an accuracy of 0.2 - 0.4 mm.

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Modernization of a 9,000-Ton Press

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A161/A029

Besides, the metal is compressed 3 mm and deeper in every press stroke and it is better worked through. The mandrel-turning mechanism (Fig. 2) consists of a stand (3) attached to a flooring plate (1) and a rocking lever (5). The ratchet wheel (8) is fixed on the end of the mandrel (9) holding the tire ring being worked. When the press table moves down, the pawl (7) engages the ratchet wheel and turns the mandrel in clockwise sense, and the bracket (13) moving down together with the press table swings the rocker lever and increases the turn angle of the mandrel. The length of the rocker lever arms is adjustable to different mandrel diameters (by means of three holes in the lever and the adjusting nut (12). The new turning mechanism has reduced the idle stroke of the press to 15-20 mm from the former 80 mm. The press is provided with a set of mandrel support seats. Before modernization the two support pillows had a constant space between them and this space was much wider than the tire rings. The new seat with spreadable pillows (Fig. 3) has eliminated the short mandrel life. Replaceable pillow liners are provided for different mandrel diameters. The pillows are moving on guides (6) and (7). There are 3 figures.

Card 3/6

L 32237-55 ENT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b) Pf-4 IJP(c) MJW/  
JD/HM/HW

ACCESSION NR: AR5004776

S/0137/64/000/010/E022/E022

SOURCE: Ref. zh. Metallurgiya, Abs. 10E125

AUTHOR: Moiseyev, D. T.; Stepanov, V. S.

TITLE: Welding of sheet and pipes made of VT1 industrial titanium and OT4 titanium alloy. Welding pipes to pipe networks.

CITED SOURCE: Sb. Konstrukts. materialy dlya نفت. prom-sti. Vyp. 2. M., Nedra, 1964, 88-91

TOPIC TAGS: welding technology, titanium base alloy, fabrication, heat exchanger fabrication, condenser fabrication, argon atmosphere, titanium VT1, titanium alloy OT4

TRANSLATION: Various methods for welding sheet and piping made of industrial titanium brand VT1 and its alloy OT4 in the fabrication of heat exchange and condenser equipment were investigated. Tests were made on sheet VT1 titanium and pipes of VT1 with a diameter of 20 mm and a wall thickness of 1.5 mm. Welding was done by the argon arc method using an infusible electrode shielded with argon.

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L 32237-65

ACCESSION NR: AR5004776

2

In addition, VT1 titanium alloy with a thickness of 12 mm and OT4 titanium alloy were welded with an arc under a flux. Best results, based on mechanical properties, for VT1 titanium alloy are assured by automatic welding under a flux:  $\sigma_{\text{ap}}$  and the bending angle are equal to  $\sigma_{\text{ap}}$  and the bending angle for the basic metal (51 kg/mm<sup>2</sup> and 160°),  $\sigma_{\text{p}}$  is 7.4 kg/mm<sup>2</sup>. High indices for mechanical properties were also obtained by automatic welding of OT4 titanium under a flux. The corrosion resistance of welded joints of VT1 and OT4 titanium alloys, both made with an argon shield and under a flux, is not inferior to the corrosion resistance of the basic metal.

V. Fomenko.

SUB CODE: MM

ENCL: 00

Card 2/2

BORINSKIY, Mikhail L'vovich; STEPANOV, Vladimir Stepanovich;  
KON'KOV, A.S., dots., red.; DUGINA, N.A., tekhn.red.

[Hammer forging] Svobodnaia kovka na molotakh. Pod red.A.S.  
Kon'kova. Moskva, Gos.nauc no-tekhn.izd-vo mashinostroit.  
lit-ry, 1961. 63 p. (Nauchno-populiarnaiia biblioteka raboche-  
go kuznetsa, no.7) (MIRA 15:3)

(Forging)

ASTASHEV, V.G., inzh.; SHEVELEV, L.S., inzh.; STEPANOV, V.S., inzh.;  
FAGEL', O.A., inzh.

Standard equipment for the centralized automated chemical stations  
of the finishing shops in knit goods factories. Nauch.-issl.trudy  
VNIITP no.4:18-37 '63. (MIRA 17:4)



STEPANOV, Vasil'y Titovich. Pranimal uchastiye TYUKINA, N.M., zootekhnik.  
TRET'YAKOV, G.P., red.; SEMENCHUK, S.I., red.; YASHEN'KINA, Ye.A.,  
tekhn.red.

[Ways of increasing productivity in sheep raising] Put' povysheniya  
produktivnosti ovtsevodstva. Kuibyshev, Kuibyshevskoe knizhnoe  
izd-vo, 1960. 12 p. (MIRA 14:2)

1. Chaban kolkhoza "Put' Il'icha," Alekseyevskogo rayona (for  
Stepanov).

(Sheep)

ANIKIN, Nikolay Aleksandrovich; DROBYSHEVSKAYA, Nadezhda Ivanovna;  
 DUDINOV, Vladimir Alekseyevich; KON'KOV, Arkadiy  
 Sergeyevich; KONYUKHOV, Sergey Mikhaylovich; MESHCHERINOV,  
 Fedor Ivanovich; POLETSKIY, Aleksandr Timofeyevich; POLYAKOV,  
 Gleb Maksimovich; SAL'NIKOV, Oleg Alekseyevich; CHERNOBAY,  
 Dmitriy Gavrilovich; GAVRILOV, P.G., kand. tekhn.nauk, retsen-  
 zent; NEFED'YEV, G.N., kand. fiz.-mat. nauk; SOKOLOV, V.M.,  
 kand. fiz.-mat. nauk; SOKOLOVSKIY, V.I., kand. tekhn. nauk;  
 RUDIN, S.N., inzh.; EYDINOV, M.S., kand. tekhn. nauk; DUBITSKIY,  
 G.M., doktor tekhn. nauk, red.; ZAKHAROV, B.P., inzh., red.;  
 KONOVALOV, V.N., kand. tekhn. nauk, red.; PERETS, V.B., kand.  
 tekhn. nauk, red.; ROZENBERG, I.A., kand. ekonom. nauk, red.;  
 STEPANOV, V.V., kand. tekhn. nauk, red.; SUSTAVOV, M.I., inzh.,  
 red.; SHABASHOV, S.P., kand. tekhn. nauk, red.; DUGINA, N.A.,  
 tekhn. red.

[Handbook for inventors and innovators] Spravochnik dlia izobre-  
 tatelia i ratsionalizatora . [By] N.A. Anikin i dr. Izd. 3., ispr.  
 i dop. Moskva, Mashgiz, 1962. 791 p. (MIRA 16:1)  
 (Technological innovations—Mechanical engineering)

STEPANOV, V.V.

Surgical treatment of chronic tuberculous empyema of the pleural cavity. Probl.tub. 37 no.4:64-69 '59. (MIRA 12:10)

1. Iz Kuybyshevskoy oblastnoy tuberkuleznoy bol'nitsy imeni Z.P.Solov'yeva (glavnyy vrach V.V.Stepanov, nauchnyy rukovoditel' - prof.A.M.Aminev).

(TUBERCULOSIS, PULMONARY, compl.  
pleural empyema, surg. (Rus))

STEPANOV, V. V.; LELEKO, N. M.

Portable automatic unit for arc heating of risers of ingots and  
castings. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch. i  
tekh.inform. no.10:33-35 '62. (MIRA 15:10)

(Electric furnaces)

STEPANOV, VYACHESLAV VASIL'YEVICH

PHASE I BOOK EXPLOITATION

728

Stepanov, Vyacheslav Vasil'yevich (Deceased)

Kurs differentsial'nykh uravneniy (Course in Differential Equations) 7th ed.,  
unrev. Moscow, Gos. izd-vo fiziko-matematicheskoy lit-ry, 1958. 468 p.  
index. 25,000 copies printed.

Ed.: Ryvkin, A.Z.; Tech. Ed.: Murashova, N. Ya.

**PURPOSE:** This book is approved by the Ministry of Higher Education of the USSR  
as a textbook for students of Soviet State Universities.

**COVERAGE:** The book deals only with problems in the domain of real variables.  
Sufficiently exact, but not too complicated, concepts of a general solution,  
integration factor and first integral are introduced. In connection with  
these, the qualitative theory of the distribution of integral curves in the  
neighborhood of a singular point is presented. Elementary methods of in-  
tegration of first-order differential equations are given and the problem  
of the existence of a solution is discussed from the beginning of the book.  
Differential equations of higher orders and a general theory of linear dif-  
ferential equations are presented. Periodic motion is analyzed in connection

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2. Singular points
3. Integrating factor

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1. First-order equations of nth degree
2. Equations with one variable missing in explicit form
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1. Existence theorem
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AVAILABLE: Library of Congress		
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YUSHCHENKO, N.R., doktor tekhn. nauk, prof. (Dnepropetrovsk); BADIYUL, A.K.,  
kand. tekhn. nauk, dotsent (Dnepropetrovsk); YEGORSHINA, Ye.G., kand.  
tekhn. nauk, dotsent (Dnepropetrovsk); STEPANOV, V.V., kand. tekhn.  
nauk, dotsent (Dnepropetrovsk); PAPAHOV, Yu.V., assistant (Dnepro-  
petrovsk); BERESNEV, S.Ye., inzh. (Minsk)

Merits and shortcomings of the textbook on the mechanization of  
loading and unloading operations. Zhel dor. transp. 45 no.7:  
92-94 J1 '63. (MIRA 16:9)

1. Nachal'nik otdela gruzovoy sluzhby upravleniya Belorusskoy  
dorogi (for Beresnev).

KLIMOVA, O.M.; KURAS, A.M.; STEPANOV, V.V.; KHARLAMOVA, N.I.

Synthesis of polyvinylene glycol derivatives. Zhur.príkl.  
khim. 37 no. 5:1152-1155 My '64. (MIRA 17:7)

1. Leningradskiy Tekhnologicheskii institut imeni Lensoвета.

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10,  
p 42 (USSR) 15-1957-10-13709

AUTHORS: Gaponov, Ye. A., Pazyuk, L. I., Gerun, A. F., Stepanov, V. V.

TITLE: The Geologic History of the Accumulation of the Sedimentary Formations in the Valley of the Dnepr River Along the Kakhovka Section (Geologicheskaya istoriya nakopleniya osadochnykh obrazovaniy v doline r. Dnepra po Kakhovskomu poperechniku)

PERIODICAL: Tr. Odessk. un-ta, 1955, vol 145, pp 7-24

ABSTRACT: The sedimentary formations consist of alluvial deposits of the ancient Dnepr, and pre-estuary, estuary, and modern alluvial deposits. They lie on disturbed underlying rocks of Sarmatian age. The channel of the ancient Dnepr was gradually deepened, from the right bank to the left, as a result of increased erosive activity following the uplift of the nearby land mass in Novosvinskoye (late Euxine) time. This ancient alluvium of the

Card 1/3

15-1957-10-13709

The Geologic History of the Accumulation of the Sedimentary Formations in the Valley of the Dnepr River Along the Kakhovka Section

Dnepr is represented by two phases: swift water and bottom layer. The deposits are gravels and quartz sands, with occasional layers and lenses of clay. Shell fragments of Lithoglyphus naticoides c. Pf. are common in these rocks. The pre-estuary deposits are channel sediments and were formed by swift water. These are fine-grained, partly variegated, quartz sands, with layers of argillaceous sands and, more rarely, sandy clays, which contain fresh-water and brackish-water molluscs: Dreissensia polymorpha Pall., Theodoxus fluviatilis, Bithynia tentaculata, Paludina fasciata, Lithoglyphus naticoides c. Pf., and others). The accumulation of the estuary deposits occurred when the land mass of this area had reached maximum subsidence. The deposits accumulated in an open estuary and were accompanied by the deposition of organic material. The estuary deposits consist chiefly of muddy, sandy clays with Monodacna colorata Eichw., Micromelania lineta Milasch., Theodoxus fluviatilis L., Bithynia tentaculata L., Lithoglyphus naticoides c. Pf., and

Card 2/3

15-1957-10-13709

The Geologic History of the Accumulation of the Sedimentary Formations in the Valley of the Dnepr River Along the Kakhovka Section

Melanopsis esperi Fer. The accumulation of the modern sediments is associated with continued depression of the land adjacent to the river and with the dominant activity of fresh river water. The modern Dnepr deposits consist of a channel-facies group and a flood-plain-facies group, both forming simultaneously. The channel facies is characterized by the accumulation of fine-grained quartz sands, with subordinate silty, argillaceous sands. The flood-plain deposits consist of argillaceous sands and layers of sandy clays and fine-grained sands. The fossils are almost exclusively fresh-water types. All these sediments of the Dnepr are characterized by the same mineral association: sillimanite, staurolite, disthene, garnet, epidote, zircon, and magnetite. These minerals are derived from the destruction of the deep-seated metamorphic crystalline schists and granitoid masses of the Ukrainskiy (Ukrainian) shield, and also from Tertiary and younger sedimentary rocks.

Ye. V. Ostrovskaya

Card 3/3

STEPANOV, V.V.

Two rare metal stockworks in Karkaralinsk District. Izv. AN Kazakh.  
SSR. Ser. geol. no.4:89-96 '57. (MIRA 11:3)  
(Karkaralinsk District--Metals, Rare and minor)

SKLYARUK, D.I.; STEPANOV, V.V.

Scientific activity of Ievhen Samilovych Burksar; on his seventieth  
birthday. Geol. zhur. 17 no.2:83-86 '57. (MIRA 10:11)  
(Burksar, Ievhen Samilovych, 1887-)



STEPANOV, V.V.

Sequence of the formation of the Saran rare-metal stockwork. Izv.  
AN Kazakh. SSR. Ser. geol. no.3:60-71 '59. (MIRA 13:12)  
(Karaganda Province--Metals, Rare and minor)



STEPANOV, V.V.

Rock crumbling processes in Odessa region. Geog. zbir. no.4:57-  
63 '61. (MIRA 14:8)

(Odessa District--Erosion)

Stankov, V.V.

Kuyalnik rocks in the valleys of the Odessa limans. Trudy Odesk. gos. univ. Ser. geol. i geog. nauk no.8:52-65 '62. (MIRA 17:9)

STEPANOV, V.V.; KUDRYASHOV, A.V.; RYBALTOVSKIY, Ye.V.

Structures igneous activity, and metal potential of the  
Alaygyrskiy and Saranskiy ore regions. Trudy Inst.geol.nauk  
AN Kazakh.SSR 6:28-57 '62. (MIRA 16:6)

(Kazakhstan--Ore deposits)  
(Kazakhstan--Geology, Structural)

KALOSHIN, S.G.; STEPANOV, V.V.

Study of some problems in percussion air drilling. Trudy Inst.  
gor. dela AN Kazakh. SSR 11:64-72 '63. (MIRA 16:8)

(Boring machinery)

MASGUTOV, R.V.; ... V.V.

Conference on the problems of geology, geochemistry, prospecting  
methods and the estimation of the new types of tantalum and beryllium  
deposits. Izv. AN Kazakh. SSR. Ser. geol. 21 no.4:96-97 J1-Ag '64.  
(MIRA 17:11)

1. Institut geologicheskikh nauk AN KazSSR imeni Satpayeva, Alma-Ata.

BORISEVICH, Ye.S.; PREOBRAZHENSKIY, V.B.; STEPANOV, V.V.

Six-level stylus type recorder PP-6. Trudy Inst. fiz. Zem. no. 39:  
54-60 '64. (MIRA 17:12)



L 5163-66 EWT(1)/EWA(h) GW

ACC NR: AT6000084

SOURCE CODE: UR/2619/64/000/035/0054/0064

AUTHOR: Borisevich, Ye. S.; Preobrazhenskiy, V. B.; Stepanov, V. V

44.55

44.55

39

B+1

ORG: Institute of Physics of the Earth im. O.Yu. Shmidt, AN SSSR (Institut fiziki zemli AN SSSR)

44.55

TITLE: PP-6 six-channel pen recorder

25

SOURCE: AN SSSR. Institut fiziki zemli. Trudy, no. 35, 1964, 54-60

TOPIC TAGS: seismologic instrument, seismography, galvanometer

12.44.55

12.44.55

ABSTRACT: The PP-6 is a hot-pen recorder. Six interchangeable galvanometers of the GPT-11 type with individual magnet systems (natural frequency of 10 cps) are used in the PP-6 recorder. The paper rolls are 50 m long and 300 mm wide and move uniformly at speeds of 0.25, 0.5, 1, 2, and 4 mm/sec. By changing gears, speeds of 4, 8, 16, 32, and 64 mm/sec can be achieved (photographs of devices and schematics for principal design, kinematic circuit, electrical circuit, and GPT-II galvanometer are shown). Orig. art. has: 6 figures. [FSB: v. 1, no. 5]

SUB CODE: ES, EE / SUBM DATE: none / ORIG REF: 001

Card 1/1 *Med*

*STEPANOV, V.V.*

STEPANOV, Vasilii K., kandidat tekhnicheskikh nauk; SHISHLYKOV,  
I.S., inzhener, redaktor; KHITROV, P.A., tekhnicheskiy redaktor

[Southern railroads freeze their own ice] Opyt zagotovki i'ia  
namorazhivaniem na dorogakh iuga. Moskva, Gos. transp. zhel-dor.  
izd-vo, 1954. 66 p. (MLRA 8:4)  
(Ice---Manufacture)

STEPANOV, V.V., kandidat tekhnicheskikh nauk.

"Mechanizing the shifting of loads in closed storerooms with the  
aid of fork lift trucks" by E.I. Ridel'. Reviewed by V.V. Stepanov.  
Mekh.trud.rab. 10 no.12:47 D '56. (MLRA 10:5)  
(Fork lift trucks)  
(Ridel', E.I.)

STEPANOV, V.V., dots., kand.tekhn.nauk

Correlations of heat and mass exchange during ice formation on a free water surface. Izv.vys.ucheb.zav.; energ. no.12:98-102 D '58.

(MIRA 12:3)

1. Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo transporta.  
(Mass transfer) (Heat transmission) (Ice)

STEPANOV V.V.

PAL'MOV, Ye.V., doktor tekhn.nauk, obshchiy red.; VSHIVKOV, P.P., insh., red.; KUBSHINSKIY, V.V., kand.tekhn.nauk, red.; PORUCHIKOV, Yu.P., kand.tekhn.nauk, red.; STEPANOV, V.V., kand.tekhn.nauk, red.; SOKOLOV, K.M., kand.tekhn.nauk, red.; SOKOLOVSKIY, V.I., kand.tekhn.nauk, red.; SUSTAYOV, M.I., insh., red.; SHUMAYEV, B.K., kand.tekhn.nauk, red.; CHERNOGOROV, P.V., prof., red.; DUDINA, N.A., tekhn.red.

[Mechanization and automation in the machinery industry] Mekhanizatsiya i avtomatizatsiya mashinostroitel'nogo proizvodstva. Moskva, Gos.nauchno-tekhn.isd-vo mashinostroit.lit-ry, 1959. 519 p.

(MIRA 13:2)

(Machinery industry--Technological innovations) (Automation)

SOV/66-59-4-10/28

28(5)

AUTHOR: Stepanov, V., Candidate of Technical Sciences

TITLE: Heat Exchange in Ice Formation

PERIODICAL: Kholodil'naya tekhnika, 1959, Nr 4, pp 41-46 (USSR)

ABSTRACT:

In order to determine the basic factors influencing the freezing-on as well as the degree of influence of each contributing factor, an investigation has to be made into the process of freezing-on of thin layers of ice. With this object in mind the Dnepropetrovsk Institute of RR Engineers, conducted two series of experiments - the first concerning freezing-on of layers of ice under forced movement of air, the second pertaining to the same process but under natural air movement. Experiments with forced air convection revealed that the coefficient of heat exchange depends largely on the linear dimensions of the freezing platform and on the wind velocity. In accordance with formulae derived by the author, it is possible to calculate the ice thickness obtained per time unit, or the length of time required for freezing-on of ice of a determined thickness, with due consideration of the factors influencing in varying degrees the intensity of the process. The values of these factors and their influence on the over-all heat exchange are determined

Card 1/2

Heat Exchange in Ice Formation

SOV/66-59-4-10/28

by the author in a number of equations and graphs. The analysis of results of experiments with natural convection show, first, that the radiant heat exchange has a decisive influence on the intensity of the freezing-on process, its share in the general heat balance amounting to  $1/3$ ; second, that at  $-4^{\circ}\text{C}$  most heat is used for evaporation, the influence of which tends to diminish as temperature decreases; third, that at  $-5^{\circ}\text{C}$  more heat is transferred by convection, than by evaporation and radiation. At a decrease of temperature from  $-2^{\circ}\text{C}$  to  $-20^{\circ}\text{C}$  the specific weight of convectional heat exchange rises from 24.5% to 47.3%. The findings of the author, as far as heat transfer coefficients are concerned, from both forced and natural convection experiments, corroborate the theory of M.A. Mikheyev concerning heat transfer and its criterial relationships. There are: 7 graphs and 2 Soviet references.

ASSOCIATION: Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo transporta  
(Dnepropetrovsk Institute of RR Engineers)

Card 2/2

STEPANOV, V.V., kand. tekhn. nauk dots.

Arrangement of the ice plant designed by the Dnepropetrovsk Institute  
of Railroad Engineers testing it. Trudy DIIT no.28:192-200 '59.

(MIRA 13:2)

(Ice--Manufacture) (Refrigerator cars--Equipment and supplies)



L 1304-66 EWT(m)/EPF(c)/EWP(t)/ENP(b) IJP(c) JD  
 ACCESSION NR: AP5012544

UR/0181/65/007/005/1375/1377  
 49  
 45  
 27

AUTHOR: Synorov, V. F.; Bulgakov, S. S.; Stepanov, V. V.

TITLE: Effect of low-energy nitrogen ions on the surface of germanium

SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, 1375-1377

TOPIC TAGS: surface ionization, conductivity, pn junction, volt ampere characteristic, ionizing radiation

ABSTRACT: The authors investigate the changes in the properties of germanium when its surface interacts with nitrogen ions having energies 1--3 keV. Germanium plates measuring 12 x 5 x 0.3 mm and having specific resistivity 10 ohm-cm, the surfaces of which were etched after polishing, were used. The samples were bombarded in apparatus consisting of a high-frequency ion source, an acceleration tube, and a current-transmitting sample-clamping system. The working gas was commercial nitrogen from which the impurities were first removed. The conductivity of the germanium was measured with a double bridge directly in the irradiation chamber. In some experiments, a non-bombarded pn junction was investigated. The volt-ampere characteristics were plotted in the usual fashion. The effect of the bombardment was judged from the change in the conductivity in the irradiated germanium with time, and also by a more accurate method of measuring the change in the inverse current

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L 1304-66

ACCESSION NR: AP5012544

through the bombarded pn junction. Plots were obtained of the relaxation of the conductivity after bombardment, of the volt-ampere characteristics of the pn junction, and of the time dependence of the inverse pn junction current. The measured results agreed well with the published data. Orig. art. has: 3 figures.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: 09Nov64

ENCL: 00

SUB CODE: SS

NR REF SOV: 011

OTHER: 004

Card 2/2

L 1576-66 EWT(m)/EPF(c)/EMP(j) RM

ACCESSION NR: AP5022604

UR/0190/65/007/009/1580/1584  
541.64+678.664

AUTHORS: Nemirovskiy, V. D.; Pavlovskaya, M. A.; Stepanov, V. V.; Skorokhodov, S. S.

TITLE: Synthesis of poly- $\beta$ -hydroxyvinyl-N-alkyl- and poly- $\beta$ -hydroxyvinyl-N,N-dialkylcarbamates

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 9, 1965, 1580-1584

TOPIC TAGS: polymer, synthesis, carbamate, polyvinylene carbonate, alkyl radical, dimethyl formamide, infrared spectra

ABSTRACT: Poly- $\beta$ -hydroxyvinyl-N-alkylcarbamates, in which the alkyl radical is  $\text{CH}_3$ ,  $\text{C}_2\text{H}_5$ ,  $n\text{-C}_4\text{H}_9$ ,  $n\text{-O}_6\text{H}_{13}$ ,  $n\text{-O}_{10}\text{H}_{21}$ , cyclohexyl and  $\beta$ -hydroxyethyl, and poly- $\beta$ -hydroxyvinyl-N,N-dimethylcarbamate were synthesized by aminolysis of high molecular polyvinylene carbonate in dimethylformamide or dimethylsulfoxide solution. The structure of the polymers was determined by the comparison of their infrared spectra with the spectra of the corresponding model of  $\beta$ -hydroxyethyl-N-alkylcarbamates. The conditions of synthesis and the infrared spectral data are tabulated. The conversion of polyvinylene carbonate to poly- $\beta$ -hydroxyvinyl-

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L 1576-66

ACCESSION NR: AP5022604

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N-alkyl carbamates (N-alkylcarbamic esters of polyvinylene glycol) was verified by the elementary analysis of the latter and from their properties (especially solubility). The solubility depends on the substituent at the carbamate atom of nitrogen and on the degree of substitution. A large number of hydroxyl groups results in a higher solubility in lower alcohols, acetic acid, and sometimes in water. Solubility decreases with increasing radical length (except for poly- $\beta$ -hydroxyvinyl-N-alkyl carbamates with N-methyl and N-ethyl groups). The experimental data show that the aminolysis of polyvinylene carbonate does not cause appreciable degradation. The thermomechanical and physicomachanical properties of the resulting polymers (glass temperature, film strength, sedimentation, solubility, viscosity of solutions) were investigated. X-ray analysis showed that the solutions are film-forming. Films from N-butyl carbamates (methanol solution) have a glass temperature of 163C, tensile strength of 800 kg/cm<sup>2</sup> (in a partially oriented state 1600 kg/cm<sup>2</sup>). From a 15% methanol solution this polymer gives a fiber with an approximately 10-km breaking length. The authors express their gratitude to Ye. I. Pokrovskiy, K. K. Kalmin'sh, Ye. F. Fedorova, G. V. Lyubimova, M. I. Bessonov, and L. Lavus, for carrying out the thermomechanical investigations, and to S. I. Klenin for the ultracentrifugal experiments. Orig. art. has: 1 figure and 1 table. 44, 55

Card 2/3

L 1576-66

ACCESSION NR: AP5022604

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy, AN SSSR (Institute of High-Molecular Compounds, AN SSSR)

SUBMITTED: 17Oct64

4155

ENCL: 00

SUB CODE: GC, OC

NO REF SOV: 002

OTHER: 006

Card 3/3 DP

STEPANOV, V.V., dotsent

Ice formation on free water surface. Vest. TSNII MPS 24 no.5:50-53  
'65. (MIRA 18:9)

1. Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo transporta.

STEPANOV, V.V.

Automatic brakes for the system of remote control of  
mine electric contact locomotives. Gor. zhur. no.10:  
68-70 0 '65. (MIRA 18:11)

1. Konstruktorskoye byuro TSvetmetavtomatika.

STEPANOV, V. V.

Feb 49

USSR/Engineering  
Welding, Arc  
Machinery - Construction

"Triphase Arc Welding in the Urals Machine Works," G. P. Mikhailov, V. V. Stepanov,  
A. A. Kirillov, Engineers, 14 pp

"Avtogennoye Delo" No 2

High quality of welded connections and fused metals, as well as high productivity, and economy of electric power make possible the use of triphase arc welding for all items now welded by single-phase method. This was confirmed under industrial conditions. Gives two tables of experimental results.

PA 42/49T22



STEPANOV, V. V.

PA 45/49T31

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USSR/Engineering  
Welding - Methods  
Machinery - Construction

Mar 49

"Means of Developing Welding Techniques in the Ural  
Machine Works," V. V. Stepanov, Engr, Ural Mach  
Works, 2 pp

"Avtogennoye Delo" No 3

Treats under: organizational measures, gas-flame  
processes for treating metals, production of welded  
metallic constructions, production of quality elec-  
trodes, welding in the tool department, and welding  
in the repair department.

45/49T31

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STEPANOV, V. V.

Machinery Industry

Operations of the preparatory cutting and supply shop, Vest. mash., 32, no. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 195~~8~~<sup>2</sup>, Uncl.

STEPANOV, V.V.

STEPANOV, V.V., kandidat tekhnicheskikh nauk, redaktor; DUGINA, N.A.,  
~~tekhnicheskyy~~ redaktor.

[Technology of machine building. Welding] Tekhnologiya mashine-  
stroeniya. Svarka. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.  
i sudostroit. lit-ry, 1953. 102 p. (MLRA 7:8)  
(Welding)

STEPANOV, V.V.; KIRILLOV, A.A.; MIKHAYLOV, G.P., doktor tekhnicheskikh nauk, redaktor; DUGINA, N.A., tekhnicheskiiy redaktor.

[Instructions on three-phase electric arc welding] Rukovodiashchie materialy po svarke trekhfaznoi dugoi. Pod red. G.P.Mikhailova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 95 p. (MLRA 8:1)  
(Electric welding)

STEPANOV, V.V.

[Leading materials on three-phase arc welding] *Rukovodiashchie*  
materialy po svarke trekhfaznoi dugoi. Sverdlovsk, Mashgis, 1954.  
96 p. (MLBA 7:11D)

~~STEPANOV, V.V.~~, kand.tekhn.nauk, red.; DUGINA, N.A., tekhn.red.

[Technology of machinery construction welding] Tekhnologii  
mashinostroeniia; svarka. Moskva, Gos. nauchno-tekhn.isd-vo mashino-  
stroit. lit-ry, 1955. 92 p. (MIRA 11:6)

1. Ural'skiy mashinostroitel'nyy zavod, Sverdlovsk.  
(Welding)

112-57-7-14676

Translation from: Referativnyy zhurnal, Elektrotehnika, 1957, Nr 7, p 131 (USSR)

AUTHOR: Stepanov, V. V.

TITLE: Semiautomatic Welder for Welding Casting Flaws by Means of a 3-Phase Arc (Poluavtomat dlya zavarki defektov lit'ya trekhfaznoy dugoy)

PERIODICAL: Primery avtomatiz. i mekhaniz. proiz-va. (Examples of Automation and Mechanization of Production Facilities), Moscow-Sverdlovsk, Mashgiz, 1955, pp 140-146

ABSTRACT: Semiautomatic equipment PA-UPI-UZTM-4 and UZTM-17/A-2 for 3-phase arc welding of large flaws in steel castings are described, as developed jointly by the Uralmashzavod and the Ural Polytechnic Institute. The semiautomatic welders are supplied by two open-delta-connected TSD-1000 transformers that furnish 1000-1200 amp of welding current. Detailed descriptions of the welder, welding technology, and technical and economic performance is presented. See also an article by I. V. Petunin in the same book.

S. Z. Sh.

Card 1/1

STEPANOV, V.V., kandidat tekhnicheskikh nauk

The welded frame of an ESh-14/65 walking excavator. Svar.proizv.  
no.9:16-18 S'55. (MLRA 8:11)

1. Uralmashsavad  
(Excavating machinery--Welding)



STEPANOV, V.V., kandidat tekhnicheskikh nauk.

Welded 1000-ton press. Svar.preizv.no.12:16-17 D '55. (MLRA 9:2)

1.Opyt Uralmashzaveda.  
(Power presses --Welding)

STEPANOV, V.V.

AUTHOR: Stepanov, V.V., Candidate of Technical Sciences 135-10-7/19  
 TITLE: Experience with Electric Slag Welding at the Ural Machinebuilding Plant (Opyt vnedreniya elektroshlakovoy svarki na Uralmashzavode)

PERIODICAL: Svarochnoye Proizvodstvo, 1957, No 10, PP 23-25 (USSR)

ABSTRACT: The electric slag welding technology employed at the Ural Machinebuilding Plant is described on the following examples. A blooming mill manipulator bar (which was formerly forged in one 11 m long piece of 160 x 800 mm cross section) is now made in 3 sections, whereby 3 tons of metal were saved (figure 1). Roller conveyor plates (conveyer at the heating ovens) were welded in a special water-cooled copper mold (Figure 2); 300 plates were welded in this way. A 10-ton-table molding machine could be used for molding of this plates, instead of the formerly needed 40-ton-table machine. A cylinder of the walking-mechanism of excavator "3M-14/75" (Figure 3) was welded on a converted lathe (Figure 4) with welding apparatus "A-460". This welding machine accommodates parts of up to 2.2 m diameter and 450 mm wall thickness. The welded cylinder was 980 mm in diameter and had a wall thickness of 150 mm. The welding process lasted 4 hours whereby 11 tons of metal and 70 manhours

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PHASE I BOOK EXPLOITATION 1113

Ural'skiy zavod tyazhelogo mashinostroyeniya, Sverdlovsk

Svarochnoye proizvodstvo (The Welding Industry) Moscow, Mashgiz,  
1958. 126 p. (Series: Its: Sbornik statey, vyp. 6) 4,000  
copies printed.

Eds.: Stepanov, V. V., Candidate of Technical Sciences and  
Kirillov, A. A., Engineer; Executive Ed. (Ural-Siberian Division,  
Mashgiz): Bezukladnikov, M. A., Engineer.

PURPOSE: This book is intended for welding engineers and technicians.

COVERAGE: This is a collection of articles published in connection  
with the 25th anniversary of the Ural'skiy zavod tyazhelogo  
mashinostroyeniya imeni S. Ordzhonikidze (Ural Heavy Machinery  
Plant imeni S. Ordzhonikidze) and dealing with developments in  
the field of welding during the 25 years of the plant's existence.  
The most interesting investigations dealing with the improvements  
of quality and the increase of productivity of welding operations  
are described. The first article deals with the history of the  
development of metal structures, welding, and flame surface

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The Welding Industry

1113

hardening. The second deals with the application of automatic welding, and the third with investigations on new SK-4 electrodes. The fourth article describes a method of determining regimes of flame surface hardening and the fifth, seventh, and last deal with investigations of the weldability of martensitic stainless chrome steel, low-carbon low-alloy steel of increased strength, and grade 10KhGSND (MS-1) steel. The sixth article deals with carbon-dioxide-shielded welding with a consumable electrode.

TABLE OF CONTENTS:

Kirillov, A.A. History of the Development of Metal Structure, Fabrication Welding and Gas Flame Processes at the Ural Heavy Machinery Plant	3
Kuklin, V.V. Application of Automatic Welding at the Ural Heavy Machinery Plant	17
Stepanov, V.V.; Krok, A.N.; and Kirillov, A.A. SK-U Electrodes for Electric-arc Welding	28

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